

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
18 September 2003 (18.09.2003)

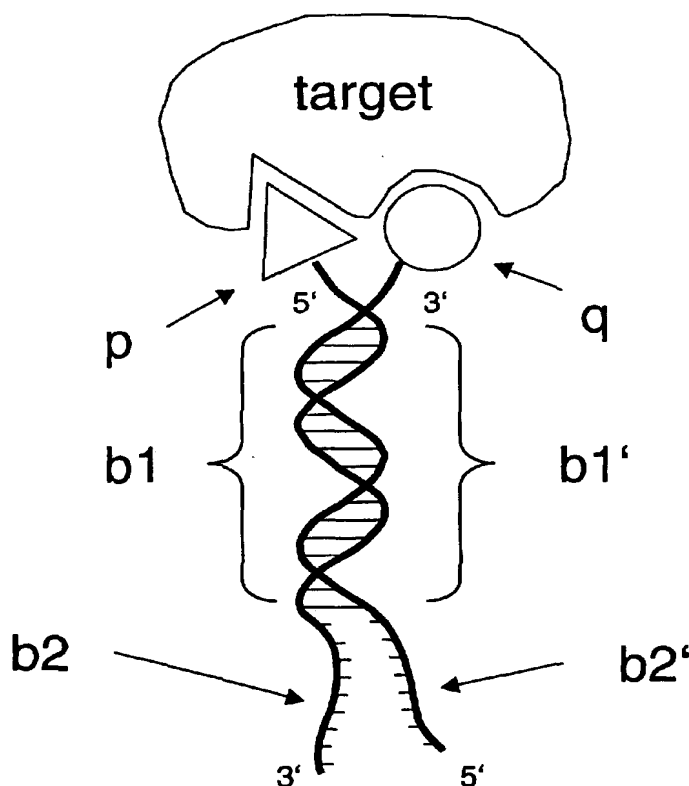
PCT

(10) International Publication Number  
WO 03/076943 A1

- (51) International Patent Classification<sup>7</sup>: G01N 33/58, C12Q 1/68, C07H 21/00
- (21) International Application Number: PCT/EP02/04153
- (22) International Filing Date: 15 April 2002 (15.04.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/362,599 8 March 2002 (08.03.2002) US
- (71) Applicant (for all designated States except US): EID-GENÖSSISCHE TECHNISCHE HOCHSCHULE ZÜRICH [CH/CH]; Rämistrasse 101, CH-8092 Zürich (CH).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): NERI, Dario [IT/CH]; Imbisbühlsteig 22, CH-8049 Zürich (CH). MELKKO, Samu [FI/CH]; Meinrad-Lienert-Str.10, CH-8002 Zürich (CH).
- (74) Agent: HEUSCH, Christian; OK pat AG, Chamerstrasse 50, CH-6300 Zug (CH).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: ENCODED SELF-ASSEMBLING CHEMICAL LIBRARIES (ESACHEL)



(57) Abstract: The invention concerns a chemical compound comprising a chemical moiety (p) capable of performing a binding interaction with a target molecule (e.g. a biological target) and further comprising an oligonucleotide (b) or functional analogue thereof. In a first embodiment according to the invention, the chemical compound is characterized in that the oligonucleotide (b) or functional analogue comprises at least one self-assembly sequence (b1) capable of performing a combination reaction with at least one self-assembly sequence (b1') of a complementary oligonucleotide or functional analogue bound to another chemical compound comprising a chemical moiety (q). In a second embodiment according to the invention, the chemical compound which comprises a coding sequence (b1) coding for the identification of the chemical moiety (p) is characterized in that the chemical compound further comprises at least one self-assembly moiety (m) capable of performing a combination reaction with at least one self-assembly moiety (m') of a similar chemical compound comprising a chemical moiety (q). The invention comprises corresponding libraries of chemical compounds as well as methods of biopanning of target molecules and of identifying such targets.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG).

— with amended claims

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— with international search report